Art. LX. *On the Characters and Natural Affinities of several New Birds from Australasia; including some Observations on the Columbidæ.* By William Swainson, *Esq. F.R. & L.S. M.W.S., &c.*

The vast Island of New Holland, or Australasia, presents to the philosophic Naturalist a more interesting field for enquiry, than any other division of the globe. Extending from Lat. 10 to 43 S., and spreading over 44 degrees of Longitude, this *terra incognita* occupies a surface little inferior to the Continent of Europe. Yet of this extensive tract, even the coasts are but imperfectly known; while the interior presents, in our best maps, an unlettered blank. Of its natural productions we may be said, comparatively, to know nothing. It is true that such districts as are in the vicinity of our settlements, have been partially explored, and that their productions have excited the astonishment and enquiries of European philosophers. But when we turn to the map, and see what an insignificant proportion such districts bear to the whole of New Holland, we are struck with our present ignorance, and lost in conjectures on the unknown forms of animated beings which may people the interior of this remote region.

To the Linnean Society of London belongs the honor of having formed the most extensive collection of the Zoological productions of Australasia now in this country. A few liberal and enlightened members of that learned body conceived it would be rendering an important service to British Naturalists, to collect together for their information and instruction the productions of the most extensive Colony under our dominion. Such a project is surely worth the attention of the Directors of our National Museum, for it is in *their* power to extend and facilitate an undertaking of this nature, infinitely more than can be expected from the exertions of a few private individuals. The present Administration have always evinced, in the most decided manner, a prompt desire to facilitate the advancement of Science, when the means have been suggested to them. Australasia is entirely our own; and, in all pro-

bability, will become hereafter the ruling power of the southern hemisphere. Its commerce even now, administers to the necessities and comforts of the mother country. With these growing advantages, let us hope that Science will not be forgotten, and that our Public Repositories of knowledge will be stored with the native productions of those remote regions; not merely to excite admiration, or to gratify idle curiosity, but to furnish such materials as may enable British Naturalists to take the lead in those general enquiries into the laws of Nature, which are now occupying the attention of some of the greatest philosophers on the Continent of Europe.

Independent of the interest, which in a national point of view attaches to the Zoology of Australasia, that country presents a very remarkable feature in the peculiarity of structure that pervades by far the greatest part of its animal productions. This is strikingly evinced in the department of Ornithology; for although we meet with a few groups of birds in New Holland, which are likewise distributed in Southern Africa, and others which assimilate to forms more properly belonging to the Indian Archipelago, yet, generally speaking, the Ornithology of Australasia is peculiar to itself. So much so, indeed, that an experienced Naturalist, having a hundred birds placed before him, of species he had never before seen, might with tolerable certainty select all those that came from this strange country. Many families which are found in other divisions of the globe are here unknown, or are represented under different forms; or, if I may be allowed the expression, are *disguised*; but at the same time betray such a peculiarity of habit, as at once to stamp them as natives of Australasia. In fact, a symbolical relationship seems to be almost universal. Nevertheless, so imperfect is our knowledge of the interior Zoology of this country, and even of the manner and habits of such species as are already familiar to us, that any thing beyond a few general conclusions must not, at present, be attempted.

Every new expedition that has been set on foot by the local government, for the purpose of extending our geographic knowledge of the interior, has returned with fresh proofs of the Zoological treasures it contains. Some of these, supposed to have been

collected during the late survey of a tract hitherto but little known, were brought home a few months ago; and have fallen under my inspection through the kindness of ——— Brogden, Esq. M.P. in whose possession they now are. A few others have been presented to me by my friend Baron Field, Esq. who has recently returned from the same country, and from whom the public may soon expect some valuable information on the geographical and geological features of those distant regions.

In laying before the scientific world the result of my observations on these new additions to our Australasian Fauna, I trust the example will be followed by other British Naturalists, and that they will be induced to seize every opportunity of recording those undescribed animals, in every department of Zoology, which have been discovered by themselves, or are continually arriving from our distant colonies. In a general point of view, it matters little who are the reapers employed to gather in the harvest which Nature every where opens to us. But I think it is a national reproach to suffer our Continental neighbours to come over, and draw the materials for their valuable works, from our own public and private Museums. To what an extent this has been done need not be told. Yet this procrastination on our part, in most cases, springs from a laudable, though erroneous motive. We aim at a point of perfection never to be attained. Year after year we keep back that knowledge we have already acquired, in the hopes of rendering it more perfect. New discoveries arise, yet we wait for more. Meanwhile the stream of life is slowly passing from us; we find those discoveries, on which we had built our future fame, anticipated by contemporaries. Our plans gradually become too vast for execution; until, discontented and disheartened, we relinquish them altogether; and discover, too late, the futility of aiming at that perfection which belongs only to beings of a superior order.

Forcibly impressed with this conviction, I shall make no apology on this, or any future occasion, for laying before the readers of this Journal detached descriptions, or isolated remarks on such new objects as may come before me; imperfect as these observations may be, they may stimulate the inquiries of others; and, at

all events, will secure to this country in some measure the credit of making known the natural productions of her own possessions.

Ceblepyris *lineatus.*

Tribe. Dentirostres. Cuvier.
Family. Laniadæ. Mihi.
Division. Ceblepyrina. Id.

C. cinereus; pectore corporeque infrà albis lineis frequentibus transversis nigris variis; rectricibus nigris.

Cinereous; breast and body beneath white, banded by narrow black lines; tail feathers black.

According to the distribution I have already proposed of the family of *Laniadæ*, the genus *Ceblepyris* of modern authors forms one of the five divisions of that group. Among the species already known to us, we find a considerable variation in the strength and size of their bills, but their structure in every other respect, (in such as I have had the opportunity of examining,) presents so few deviations of character, that I shall refrain, at present, from proposing any subdivisions of the group.

Total length about ten inches, bill moderate, the culmen carinated. The general colour of all the upper plumage, and of the chin and throat beneath, is light cinereous; the breast and all the under parts of the body, as well as the inner wing coverts are white, closely banded by narrow transverse lines of a deep black colour: the space between the bill and eye is also black. The wings are moderately long and pointed; the quills are black, with the exterior half of the outer webs cinereous, and margined by a narrow line of whitish: the first quill is half as long as the second, which is again shorter than the third, and this last is very nearly as long as the fourth. The tail is black and obsoletely rounded, the two middle feathers cinereous at their base. Two specimens of this apparently undescribed species belong to Mr. Brogden.

Total length 10 inches; bill nearly 1 inch from the gape; tail 4, wings $5\frac{3}{4}$ inches.

Ceblepyris *tricolor.*

C. nitidè niger, albus infrà; crisso tegminibusque superioribus cinereis; tectricibus rectriciumque apicibus albis.

Glossy black, beneath white; rump and upper tail coverts cinereous; wing coverts and tips of the tail feathers white.

This is by far the smallest species of this group I have hitherto seen. It is likewise interesting, as it differs in several respects from the other *Ceblepyrinæ*. The bill is more slender, and its sides more compressed; the nostrils, instead of being completely covered by the frontal feathers, are partially exposed; and form an angular sulcation covered by the membrane. The tarsi are somewhat lengthened; and the wings longer, more pointed, and obviously adapted for a superior flight; the first quill being very short, while the second is scarcely shorter than the third, and decidedly longer than the fourth. How far these deviations may be relied upon as affording sectional characters, I am at present not prepared to state; yet I cannot help thinking they point out a strong relationship to the *Muscicapidæ*.

Size rather larger than a Lark. The upper plumage, from the head to the middle of the back, is deep black, glossed with a metallic lustre of dull greenish blue; the lower part of the back, as well as the rump and upper tail coverts, are pale cinereous; the spiny shafts of the feathers in these parts are very weak, yet sufficiently strong to show the natural situation of the bird. The under plumage, (including the sides of the neck and ear feathers,) is pure white. The whole of the lesser, and part of the greater wing coverts, are also white; so also are the margins of the scapulars, and part of the greater quills. Tail black and rather lengthened, the two outer feathers graduated, the rest nearly of equal length, and all of them tipt with white. The lateral scales of the tarsi, as in all the *Ceblepyrinæ*, are entire.

Length of the wings 6 inches, bill $\frac{6}{8}$ from the gape. Tail nearly 3 inches, (one half being hid by the upper coverts,) tarsi $\frac{5}{8}$.

In the collection of Mr. Brogden. There is also in Mr. Vigors's possession a species closely allied to this, but supposed to have come from Java.

PITTA *versicolor.*

Family. Merulidæ. Vigors.
Division. Myiotherina. Mihi.
Genus. Pitta. Vieillot.

P. viridis, infrà fulva; uropygio tectricibusque cæruleis, ano rubro; vertice rufo; nuchâ, mento, maculâque abdominali nigris.

Green, beneath fulvous, rump and wing coverts cærulean blue; vent red; crown rufous; nape, chin, and abdominal spot black.

The *Turdus Colma* of Linnean writers, (from which Illiger drew the characters he has assigned to the genus *Myiothera*) may probably be found to represent the type of a distinct division in the family of *Merulidæ*; in which all the short-tailed Thrushes, with ambulating tarsi, found in the tropical latitudes of the Old, and the New World, as well as in Australasia, will be brought together.

The genuine *Pittæ*, as far as I can discover, are confined to India, its adjacent Islands, and Australasia. There is such a general similarity of plumage among the species, that Doctor Latham was induced to consider such as were known to him when he wrote, as varieties of his short-legged Crow; yet modern Ornithologists hold a contrary opinion. The present bird, in particular, so closely resembles the *Pitta cyanoptera* of M. Temminck, (beautifully figured in the *Planches Coloriées*, Liv. 37. pl. 218.) that a doubt may arise, in some minds, whether they should be considered as separate species. My reasons for adopting the contrary opinion, are founded on their geographic situation, and on those modifications in the colouring of their plumage, which I shall presently detail. *P. cyanoptera* inhabits Java, while *P. versicolor* is an Australasian bird. The former is nearly two inches smaller; the greater quills (if the above figure be correct,) are much longer than the scapular quills; while in our bird, they are almost of the same length. Next as to colour; the black spot on the chin in *P. cyanoptera*, is very small, and the throat *pure white*; whereas in the Austra-

lasian species, the black spot is very large, and ends in a lengthened point down the middle of the throat, which is *fulvous*. In *P. cyanoptera*, the white on the wings is spread over half the quills; but in the other, this spot can scarcely be seen: in *that* the tail is tipt with blue; in *this* with dull green. Lastly, *P. cyanoptera* is without the black spot in the middle of the abdomen, which is so conspicuous in our bird. These comparisons may be tedious, but are essential, not merely as relating to these two birds, but as affecting the question on the insulated character of the terrestrial birds of Australasia. I shall now describe the species in question.

Size rather larger than the Song Thrush. Length from the bill to the tail nine inches and a quarter. The ground colour of the upper parts is pure olive green; the greater wing coverts, and the external half of the lesser quill feathers, are the same. (In *P. cyanoptera* the greater wing coverts are blue.) On the chin is a large pointed patch of black, which unites to a broad band on each side of the head, encircles the crown, and again forms a pointed patch on the upper part of the neck. The crown is deep ferruginous, with a narrow black stripe down the middle. The shoulders and lesser wing coverts are bright cærulean blue, having a silvery metallic lustre, not unlike the gloss on silk; and across the rump is a band of the same colour. The upper tail coverts are black; the tail itself very short, the two middle feathers rather the shortest, and all of them black, tipt with olive green. The greater quills hardly exceed the others in length; they are black, with pale tips; and at the base of the fourth, fifth, and sixth, is a small white spot. The sides of the neck, the throat, and all the under parts are buff colour, except the vent, middle of the belly, and under tail coverts, which are of a beautiful red; in the middle of the abdomen is a patch of black. The bill is black, and the tarsi pale yellowish.

A beautiful specimen of this bird is in Mr. Brogden's collection.

The relative dimensions of *P. versicolor* and *cyanoptera* (the latter taken from the figure in Pl. Col.) are here subjoined.

	P. versicolor.	*P. cyanoptera.*
Total length, from the tip of the bill to the end of the tail	INCHES. 9¼	INCHES. 7*
Bill from the gape	1½	1²⁄₁₀
Wings in length	5	4¾
Tail	1¾	—
Tarsi	1¾	1½
Hallux and claw	1	¾

Columbidæ.

The extensive genus of *Columba*, like that of *Falco*, has been pronounced *indivisible* by an eminent Ornithologist of the present day; who, from having made these birds his peculiar study, is in one sense pre-eminently qualified to give a decided opinion. The principle he has laid down, and on which this opinion consequently is founded, is, that whenever intermediate species are discovered which serve to unite two neighbouring genera, such genera should invariably be united. This theory has been, in my mind, completely refuted in the pages of this Journal; and is so calculated to destroy, not only the valuable labours of its author, but all those artificial arrangements which have been invented to facilitate our acquaintance with Nature, that I shall not stop to give it further consideration. It is admitted that there are certain peculiarities of form, and of economy among the *Columbidæ*, which point out natural divisions. Some of these have been used for the construction of genera by MM. Le Vaillant, Vieillot, and Cuvier, and of sections by M. Temminck; but the immense number of species already known, and the great influx of new ones, renders it essential that many others should be formed. As we labour under a comparative ignorance of the natural economy of the vast number of tropical species recently described, any attempt to throw the *Columbidæ* into their natural arrangement must be very imperfect. The basis of such a work must rest on their natural habits, their food, and their geographic distribution. Yet, as we see in other natural families that a pecu-

* "Longueur, sept pouces." Pl. Col. pl. 218.

liarity of economy is almost invariably accompanied by some corresponding modification of structure, we shall receive considerable assistance by accurately examining such variations. We may note the forms, without being acquainted with their reference to the peculiar habits of the group; and, although our inference, in some cases, may be erroneous, in others we shall not be far from the truth. The Passenger Pigeons, for instance, have their first quill feather as long as any of the others; a sure indication of that rapid and long-continued power of flight they are known to possess. The *Columbi-Gallines* of M. Le Vaillant* are described as having naked and somewhat lengthened tarsi; a structure well adapted to those ambulating habits, which bring some of them close to the *Phasianidæ*, Vig., and others to the *Cracidæ*, Vig.

Another group,† the *Colombars* of M. Le Vaillant (*Vinago*, Cuv., *Treron*, Vieil.,) have a strong hard bill; and their short clasping tarsi covered with feathers, leads us to conclude they seldom perch upon the ground; in fact, MM. Le Vaillant and Cuvier both assert that these birds are only found in the tropical forests of the Old world. Apparently confined to the same regions, we see another group, wherein the bill partakes of that weak structure observed in the generality of Pigeons, while the tarsi are thickly clothed with feathers, similar to the group last mentioned. These seem to be the principal divisions among the *Columbidæ*. Minor distinctions may be founded on the relative length and structure of the quill feathers, which in some are very peculiar; and, as being connected with the powers of loco-motion, deserve our attention. Some writers have attached more importance to the form of the tail; and have therefore divided the *Columbidæ* into two great divisions: separating such species as have this organ rounded or lengthened, from those in which the tail is short and even. This plan, however it may help to discover a *species*, is obviously artificial, and totally inadequate to give us any ideas on

* Le Colombi-galline a Carnail. Ois. d'Af. 6 tab. 279. Le Colombi-Hocco, pl. 280. Le Colombi-perdix a cravate noire, pl. 281. Le Colombi-perdix roux-violet, pl. 282. Le Colombi-caille, pl. 283.

† Le Colombar. Ois. d'Af. 6. pl. 276, 277. Columba capellei. Tem. Pl. Col. liv. 24. tab. 143. &c.

natural groups. The tail, in fact, is but an accessory help to the wings, and therefore deserves an inferior consideration, although its form may be usefully employed in sectional divisions. Among the characters which may perhaps guide us in distinguishing inferior groups, or at least sections, may be noticed the naked orbits so conspicuous in several exotic species.* The Ground Doves of the New World† show a peculiar character in having the sides of their tarsi margined by a row of minute feathers, which often conceal the knees. Their first quill feather is also very broad, and almost as long as any of the others: if these characters hold good in more instances than those I have quoted, we shall be justified in using them in a generic sense, by separating these birds from the other *Columbi-Gallines* of M. Le Vaillant. Allied to the Ground Doves in manners, but greatly distinguished from them in the structure of their feet, is the Bronze-winged Pigeon of Australasia, (*Col. chalcoptera*, Lath.); in this, the frontal scales of the tarsi, (unlike any other species I have yet seen,) are formed of two series; while those of the sides are reticulated and very minute: the hind toe (or hallux) is also remarkably short, and clearly evinces an approximation to the more perfect *Gallinaceæ*. Many other indications of particular groups may doubtless be discovered by naturalists whose materials for inquiry are more extensive than my own. In giving this hasty and imperfect sketch of the family, I have only been desirous of proving that it contains distinct groups, and *bonâ fide* genera; as fully capable of definition as any others already admitted into our Systems. We can do no more than make the best use of those materials within our reach; and probably these hints may elicit further observations from naturalists who are more fortunate than myself in possessing a numerous collection of birds.

* Columba Franciæ. Gm. 779. (Le Ramier Hérissé. Vail. Ois. d'Af. 6. 267.) C. auricularis. Tem. (8vo) 236. Col. gymnopthalmus. Tem. 225.

† Columba martinica. Lin.—Columba passerina. Lin. Wilson. Am. Orn. Vol 6. pl. 46. f. 2, 3.

Genus. PTILINOPUS. Mihi.

Generic Character.

Alæ mediocres, remigum pinnâ primâ apicem versus contractâ, tertiâ quartâque longissimis.

Rostrum gracile.

Tarsi plumosi.

In proposing the characters of this genus, I wish them to be considered more as indicating a group, by which the genus *Treron*, Vieill. (*Vinago*, Cuvier,) may be united to the naked-legged Pigeons, than as being so rigidly framed as to exclude all other species which do not strictly present the same structure. It is quite evident, from consulting the excellent figures of MM. Le Vaillant and Temminck, that there are a number of Pigeons found both in India and Australasia, which have the feathered tarsi of *Treron*, accompanied by the slender bill of the other *Columbidæ*, and thereby clearly indicate an intervening group: yet among these birds there is a material difference in the construction of their quill feathers. In the *Columba magnifica*, for instance, the first quill is equal in *breadth* to any of the others, and thus assimilates, probably, to that structure which belongs to *Treron*;* while, in the bird we are about to describe, this quill is suddenly narrowed, and resembles the blade of an obtuse pen-knife. This singular formation, however, I have detected in several of the naked-legged Pigeons, such as the *C. striata*, Lath., and the *C. humeralis* of Temminck, two birds from Australasia in the Linnean Society's collection; and likewise in two other species from Brazil, now before me. This character consequently will not be peculiar to *Ptilinopus*; but when coupled with the feathered tarsi and slender bill, may indicate a group to which the *Columba monacha* of Temminck (Pl. Col. liv. 43. pl. 253), and the *Colombe porphyre* (Pl. Col. pl. 106) most probably belong.†

* I say *probably*, because I have not, at this moment, the means of ascertaining the fact. Mr. Vigors is in possession of several specimens of this group, which he assures me have no peculiarity in the shape of first quill feather.

† Judging from the description of authors, the *Columba maculata*, Lath., and the *Col. viridis*, Linn., appear referable to *Ptilinopus*.

The *Columba magnifica* may thus form the type of a subordinate section, more closely approaching to *Treron*; while the narrow-quill feather of *Ptilinopus* may serve to conduct us to the naked-legged Pigeons.

PTILINOPUS *purpuratus*. (Var. Regina.)

Columba purpurata? Lath. Gen. Syn. 4. 626.
Colombe kurukuru? Tem. Pig. p. 280.

P. viridis, vertice purpureo-roseo margine semi-lunari aureo; fasciâ latâ abdominali aurantiacâ; tegminibus inferioribus flavis; pennis colli rigidis apice furcatis.

Green; crown, rosy purple with a semilunar margin of golden-yellow; band on the body orange; under tail coverts yellow; feathers on the breast rigid, the tips forked.

I shall first accurately describe two specimens of this most lovely bird, sent to Mr. Brogden; and then make some observations as to its identity with the *Columba purpurata* of authors.

Total length about nine inches.* The upper plumage is of a beautiful parrot-green, inclining to yellowish; the green on the wings is deeper and more brilliant, having a rich glossy appearance: the greater coverts and lesser quills are margined by a narrow edging of buff-yellow. The crown and fore part of the head is covered by a patch of a beautiful rose-lilac colour, and bordered behind by a narrow line of golden-yellow; this line commences on each side of the mouth, and forms a semicircle on the crown. The chin, and half way down the throat, is pale yellow. The occiput, sides of the head, and tips of the neck-feathers, are of a pale and delicate cinereous. The feathers on the breast are pale green, but tipt with cinereous; these feathers have also a peculiar formation, each being forked in such a way, as to give the appearance of half the shaft, with its lateral radii, having been broken off. Immediately beyond the breast the colour is pale green, and the feathers become tinged with a spot of delicate lilac, which covers a small space in the middle of the body, and en-

* It is very difficult to give, with exactness, the total length of any bird after it has been stuffed; so much depending upon the degree of extension or contraction which the skin undergoes by that process.

croaches upon a rich orange transverse band which graduates into the pure yellow of the vent. The under tail coverts are orange; and the flanks and tarsi olive-green. The tail is even, the two middle feathers rather shorter and entirely green; the rest are green only on their outer webs and black within; but all are crossed at their extremities by a broad band of buff-coloured yellow. The greater quills are blackish, but their outer webs are dull green, with a very narrow margin of yellow. Tarsi covered with soft and thick-set feathers down to the divisions of the claws; the soles are broad and flat.

Female, or young bird.

The principal difference between this specimen and the last described, is the absence of the ruby-coloured crown; the situation of which is only indicated by a spot of dull lilac in front of the head; while the yellow line, instead of encircling the crown, is merely seen near the eye: the green on the wings is not so brilliant, nor of so blue a tinge as in the male; while the tail-feathers are only *margined round* their tips with pale yellow: the extremities of the greater quills are also margined with white; the orange on the abdomen is duller, and mixed up with yellow, and the green base of the feathers in this part more distinctly seen.

Both these specimens are among Mr. Brogden's birds, and are supposed to come from Australasia.

On comparing the above descriptions with those of the *Columba purpurata*, by M. Temminck and Dr. Latham, several variations will be observed; these, for the sake of brevity, may be thus noticed:

Ptilinopus purpuratus (var.? regina). Mihi.	*Columba purpurata.* Latham and Temminck.
1. Tarsi covered with olive-green feathers as far as the division of the claws.	1. Les tarses sont à moitié emplumés. Temminck. The legs are very *rough*,* and of a dusky black. Lath. Gen. Synopsis.

* This is a very ambiguous expression; a foot may be either *rough* with scales, or *rough* with unconnected feathers. In our bird the feathers are short, small, close-set, and very smooth.

2. Middle of the body with a purple spot.	2. Not alluded to.
3. Tail feathers rounded at their extremities.	3. All the tail feathers somewhat pointed at the end.—Lath.
4. Ends of the tail feathers banded with buff-coloured yellow.	4. L'extrémité de toutes les pennes est d'un blanc nuancé de vert.
5. Chin, and part of the throat, straw colour.	5. Not alluded to.

The only material difference between these two birds consists in the tarsi of one being entirely covered with feathers, and those of the other but partially; there seems also a slight variation in the form of the tail feathers. I do not lay much stress upon the dissimilarity of their colours, because it appears that the *Col. purpurata* of authors is subject to much variation of plumage. Future observations will shew whether there may not be one or two distinct species confounded under this name. All those birds which I have mentioned as likely to come into the group of *Ptilinopus*, have their general plumage green, variegated by the most beautiful colours; they are the inhabitants of India, and the Islands of the Pacific Ocean. Their tails are either even or rounded, while the variation in the form of their quill feathers has been already noticed.

Genus. Sericulus. Mihi.

Rostrum Orioli rostro simile.	Bill of Oriolus.
Tarsi elongati, validi.	Tarsi lengthened, strong.
Cauda subfurcata.	Tail slightly forked.

Two specimens of this rare and superb bird are among those in Mr. Brogden's collection. As a species, it has long been known by the excellent figure of Lewin; yet as its situation in Nature calls for much enquiry, I avail myself of this opportunity to offer a few remarks upon the subject.

That *Sericulus* presents a type of form, totally distinct from

all other known birds,* cannot I think be questioned; it has the bill of a frugivorous bird, without even the slightest indication of those weak bristles or hairs which, in the Thrushes, are situated on each side the rictus. The size and shape of its bill, in fact, is that of a genuine Oriole; the resemblance extends to the *nares*, and even to the proportional length of the wings and quill feathers: but the tarsi put on quite a distinct form; and by their lengthened, robust structure, give us every reason to suppose that the habits of the bird assimilate to those of the *Merulidæ* which seek their food, not only among trees, but upon the ground. We are struck by another anomaly in the tail, which, unlike that of any birds in the two last mentioned groups, is slightly though distinctly forked; this structure we generally find is indicative of a superiority of flight; and is quite unknown to me in any species of Oriolus, Turdus, or Meliphaga.

From a consideration of the above characters, and arguing from theory, I should therefore say that *Sericulus* would indicate that passage between the true Orioles and the *Merulidæ*, which at present appears undiscovered; and that its habits and economy may consequently assimilate to both these groups.

But against this theory, there is at present a strong, and apparently an insurmountable objection. For this very bird has been described as *nectiferous*, in other words, as deriving its sustenance from flowers; and this fact is implied by the name it has received from a Naturalist who lived in its native country, and certainly had the best opportunity of ascertaining the truth. Lewin, who founded the genus *Meliphaga*, describes this as the first species, by the name of *King Honeysucker*. Yet so little does it accord in outward structure, even in one solitary instance, with those birds, that I hope not to be considered too sceptical if I withhold my belief from testimony apparently so conclusive. Besides, it must be remembered that Lewin says nothing *expressly* about its manners or mode of feeding; and that although in many instances an accurate observer, he might err on this

* I must here except the *Paradisea aurea* of Latham, placed by Linnæus among the Orioles, and which seems from the description of authors, closely allied to *Sericulus*.

point, and suppose that while the bird was feeding upon *fruits*, it was sucking *flowers*. Yet it is useless to argue from conjectures. All we can say is, that if *Sericulus* belongs to the circle of *Meliphagidæ*, it presents a most singular deviation from the general structure of all those birds which are known to be nectiferous. I hope some naturalist of that distant region where it is found, will throw some light on this important question; by sending home a specimen of the bird in spirits, accompanied by details on its natural economy. Until this is done the question must remain undecided.

Sericulus *chrysocephalus*.

S. niger: *cervice, remigibusque secundariis aureis.*

Black; crown, upper part of the neck and lesser quill feathers golden yellow.

King Honeysucker, Lewin's Birds of New Holland, Pl. 1.

Size of a thrush. Length nine inches. Bill three quarters of an inch long, from the frontal feathers to the tip; rather strong; the sides compressed, but the base broader than high; the culmen is elevated, and gradually curved nearly its whole length: the upper mandible projects over the lower, and has the tip obtuse; the ends of both are notched: the colour is pale, or yellowish brown. The nostrils large, basal, and entirely naked; the upper part is covered by a thin membrane, and the under part forms an oval aperture. Front, crown, and upper part of the neck, covered by soft, close-set feathers, of a brilliant golden yellow; those on the head very short, and resembling velvet: this patch of colour borders the ears, and terminates in a half collar round the back of the neck. On the wing, is also a large spot of pure yellow, which covers the scapulars, and leaves only a black tip to the lesser quills; the greater quills, (except the two outermost) are black, with the half of the inner webs, (nearest the shafts,) yellow. All the rest of the plumage, (including the ear feathers, and a stripe over the eye,) is deep black; the tail is slightly, but decidedly forked; the middle feathers being three-tenths of an inch shorter than the outer pair. Tarsi black, lengthened, and robust; the hind claw although strong, is considerably shorter

than the middle claw, a structure which seems to me at total variance with all those *Meliphagidæ* with which I am acquainted. The anterior toes are long and slender, the outer connected to the middle toe as far as the first joint, but the inner deeply cleft to its base.

Dimensions.—Length of the wings 5 inches; tail 3; tarsi 1 $\frac{3}{4}$; middle anterior toe 1 $\frac{1}{4}$; hind toe $\frac{3}{4}$.

Genus. PTILORIS. Mihi.

Tribe. Tenuirostres.*
Family. Meliphagidæ. Vigors. Mihi.

GENERIC CHARACTERS.

Rostrum longissimum, compressum, falciforme.
Nares basales, plumosi, aperturâ lineari.
Tarsi breves. Hallux validus. Tarsus halluxque æquales, plantæ planæ, latæ.
Cauda brevis, æqualis.
Alæ rotundatæ.

Bill very long, compressed, sickle-shaped.
Nostrils basal, plumed; aperture linear.
Tarsi short, hallux strong, and as long as the tarsus. Soles of the feet flat, dilated.
Tail short, even.
Wings rounded.

Independently of the magnificent plumage which adorns this bird, it is one of those whose peculiar structure, at first sight, seems to disturb all our artificial systems, and speculative theories. In its form are united the characters of three distinct families. The metallic brilliancy of its plumage, first leads us to think it a Paradise bird,—a glance at its long curved bill immediately reminds us of Promerops,—until, looking more closely to the feet, we discover, in its strong *hallux*, the complete structure of

* The five families of this Tribe, I conceive, will be represented by the following Genera: 1. *Meliphaga*, Lewin; 2. *Nectarinia*, Illiger; 3. *Trochilus*, Linn.; 4. *Promerops*, Brisson; 5. *Paradisea*, Linn.

the *Meliphagidæ*. This character is so important, and apparently so connected with the natural economy of the Australasian nectiferous birds, that it is necessary to make a few observations upon it in this place; particularly as it goes more to decide the situation of *Ptiloris* than any other indication I can discover. The Australasian *Meliphagidæ*, with the exception of one type,* derive their principal sustenance, as it is well known, from the nectar of flowers: but the shortness of their wings renders it impossible that their food can be thus extracted during flight, as in the case of the Humming birds. They must therefore hop or climb among the branches; and, while feeding, must generally be in a semi-perpendicular position.† As a support to them in this attitude, we accordingly find that the hind toe is remarkably strong, and so much prolonged, as to give the foot an appearance of being scansorial. Now as this character pervades the whole of the *Meliphagidæ*, and is very conspicuous in *Ptiloris*, I consider it as a sufficient indication of the family in which we should place this bird.

An inquiry into the precise situation of *Ptiloris* among the *Meliphagidæ*, would extend the limits of this paper too much; and will be more suited for those general considerations on the *Tenuirostres* which I hope, ere long, to submit to Naturalists. I shall therefore merely observe, that while this genus seems to open a passage to the next family of *Paradiseidæ*, it gives a typical representation of that group among the *Meliphagidæ*.

* *Entomyzon*, (Mihi). The blue-faced Grakle of Latham, whose filamentous tongue is used for extracting small insects from between the broken bark on the stems of trees; which are climbed by this bird somewhat in the same manner as a Woodpecker. See *Lewin's Birds of New Holland*. A more beautiful connection between the *Scansores* and the *Tenuirostres* could hardly be imagined.

† This I infer, from the circumstance that all the Nectiferous birds I have seen in a state of nature, rarely, if ever, bend their head *downward* while in the act of feeding. This is particularly observable in the Humming birds; who, before they thrust their tongue into a flower, always get rather *below* it, bending their head *upwards*, while hovering on the wing and sucking the juices. This attitude is admirably represented in Wilson's inimitable figure of *Trochilus colubris*. Am. Orn. vol. 2. pl. 10.

We must here notice the *Epimaque proméfil* of M. Cuvier,* which presents a strong resemblance, in many respects, to *Ptiloris*. This bird I had the opportunity of seeing and describing before the dispersion of Mr. Bullock's collection, when it was secured for the French Museum. The legs of this specimen were unfortunately wanting, and were doubtless imperfect in that described by M. Cuvier. Until their structure can be examined, it will be impossible to decide whether this bird belongs to the *Promeropidæ* or to the *Meliphagidæ*. For the present, I concur with M. Cuvier in placing it among the former; considering it may connect, (in conjunction with the Grand Promerops of New Guinea) the family of *Promeropidæ* with that of *Paradiseidæ*, which latter again passes into the *Meliphagidæ* by means of *Ptiloris*.

Having now endeavoured to ascertain the station which this extraordinary bird holds in Nature, it only remains for me to give the characters by which it may be known as a species.

Ptiloris *paradiseus*.

P. suprà nitidè atro-purpureus, infrà nitidè atro-viridis; vertice jugulo rectricibusque mediis splendidè cæruleo-viridibus.

Black, glossed with purple above and green beneath; crown, throat, and two middle tail feathers splendid blue-green.

MALE.

It is impossible for any written description, or coloured representation, to convey an adequate idea of the rich and varied tints of this superb creature. Its *size* is about that of the six shafted Paradise bird, and its *general colour* is a deep velvet black, glossed on the *upper parts* with rich brownish lilac, which in some lights, leaves the margin of each feather black, and gives them a scale-like appearance; this gloss is very rich on the scapular quills, but is only seen on the outer sides of the greater quill feathers. The whole upper part of the *head* is covered by a crown of small scale-like feathers, of a splendid metallic blue-

* Règne Animal, Tom. I, p. 408; Pl. 4, f, 2,

green; each colour alternately preponderating as the direction of the light is varied. The middle of the *throat* is occupied by a large patch of the same colour, which, as it approaches the breast, divides, and forms a stripe on each side. The *chin* and *breast* appear to be of an intense velvety black; but, when held in certain lights, become glossed with the most beautiful reflections of lilac and purple. The feathers on the *body* are yet more changeable; in some directions they seem entirely black, in others they appear black, margined by a rich olive green; while in another position, the black centre of each feather is glossed by brilliant reflections of lilac and purple intermixed, and relieved by a narrow line of bright green bordering the duller hue of the margins. The feathers on the *flanks* are the same, and much lengthened. The side feathers of the body are black and very long, being nearly as much developed as those of *Paradisea sexsetacea.*

The *wings* are black and glossy, and although not long, the quills are remarkably broad, yet so abruptly truncated that the *greater quills* hardly exceed the lesser ones in length. The shafts of all, except those nearest the body, end in a lengthened pointed hair, extending beyond the radii: the first quill is half as long as the second, and is pointed; the second is but slightly pointed, and is scarcely shorter than the third.

The *tail* is short, fasciculated, somewhat concave, and even; each feather is abruptly truncated, and has the shaft terminated in the same manner as those of the quills: the colour of the lateral feathers are deep black; but the middle pair are of a shining metallic green-blue, and half an inch shorter than the others. The *bill* is black, and considerably compressed from its base, having towards the tip of the upper mandible an appearance of a notch. This character is common to the *Meliphagidæ* and *Paradiseidæ*, but is entirely wanting among all the *Promeropidæ* I have hitherto seen. In this sex the *nostrils* are completely hid by the frontal feathers, which entirely cover the membrane.

The *legs* are very short, and the knees concealed by feathers; the lateral scales of the tarsi are entire. The size of the three fore *claws* are equal; but the hind claw is considerably stronger.

Dimensions.

	In.
Total length	12
Bill in a strait line from the rictus to the tip	2 $\frac{2}{10}$
Wings	6
Breadth of the lesser quills	1 $\frac{3}{4}$
Tail	3 $\frac{1}{2}$
Tarsi	1 $\frac{2}{8}$
Hallux and claw, in a strait line	1 $\frac{2}{8}$
Middle toe .....ditto	1 $\frac{2}{8}$

FEMALE.

The contrast of colour between this sex and that we have just described, is particularly striking. While the male is adorned with the refulgent splendour, and singular developement of plumage belonging to the Paradise birds, the female is clothed in the homely and "russet brown" attire of the Scansorial and Meliphagous tribes; as if nature intended to shew us in what manner all these groups were connected. There are many curious circumstances attending the colour of certain families, particularly as affecting their geographic distribution, which have long convinced me that this subject deserves much greater attention than it has hitherto received. In the present case the female bird is partly coloured like a *Dendrocolaptes*, a *Picus*, and a *Meliphaga*. The upper parts of the plumage are greyish brown, the quills and tail edged with ferruginous. The head and its sides are blackish, and each feather marked by a whitish line down the middle of the shaft. Thus far we have a disposition of colours universal among the *Dendrocolaptes*. The ear feathers are like those of the head, but are bordered above by a stripe of white which begins behind the eye, a circumstance very general among the *Meliphagidæ*, but of which I know no instance in *Dendrocolaptes*. Lastly, the under plumage is that of a Woodpecker, the ground colour is whitish, tinged on the breast and body with ferruginous, each feather being marked by a transverse angulated line of black, resembling the head of a broad arrow. The side feathers, (so

much developed in the male,) in this sex are of the ordinary length, so also is the breadth of the lesser quills; but the length of the bill exceeds that of the male by one eighth of an inch. In this specimen there is a slight difference also in the comparative length of the quill feathers: the third being in a very slight degree shorter than the fourth and fifth.

Although this bird is not absolutely labelled as the *female*, yet I have no doubt whatever of such being the case.

Art. LXI. *Observations on the Manners of a live Toucan, now exhibited in this Country. By* W. J. Broderip, *Esq. F.L.S.*

[To the Editors of the Zoological Journal, 17th Dec. 1824.]

Gentlemen,

I should hardly consider the following trifle worthy of insertion in your Journal, were it not for the interest which is attached to any memoir illustrative of the habits of animals, and more particularly of those whose geographical distribution renders them comparatively inaccessible.

There are, perhaps, few matters of this kind which have so much excited the attention, and baffled the investigation of Naturalists, as the habits and food of the Toucans. It appears that Linnæus had reason to believe that some of these birds partook of animal food, for he called one of the species *Piscivorus*; and, accordingly, met with the censure which too many are apt to lavish on those who venture to broach any thing which gives a shock to preconceived opinions.

My friend Mr. Swainson, who has seen these birds in their native forests, and has since paid great attention to the species, long ago told me that he had frequently watched them; and remarked that they always perched on the summits of lofty trees, where they would remain as if *watching*. This circumstance, joined to others connected with the remains of food found in the stomach of such